

II. REMARKS

A. Introduction

In this Office Action claims 1-22 are noted as pending and are rejected.

In summary of this Response, the written description is amended, claims 1-2, 4, 7-8, 13, 15-17 and 22 are amended, new claims 23-41 are added to afford a differing scope of protection for the invention to which the applicants are entitled, and remarks are provided.

New claims 23-41 recite alternate embodiments. Support for these claims is found, e.g., at numbered paragraphs 8, 12, 14, 15, 15, 22, 35, 35, 35, 36 and 37 of the application as filed.

B. Obviousness-Type Double Patenting Rejection

In the Office Action, an obviousness-type double patenting rejection is made for claims 1-22 over the currently pending claims of the parent, U.S. Serial No. 10/056,090.

As this parent application Serial No. 10/056,090 has not yet issued, the rejection remains provisional and a response thereto is deferred.

C. Objection to the Claims

The Examiner has identified an error in claim numbering which is attended to herein.

D. Rejection of Claims 1-4, 13 and 17 Under 35 U.S.C. §102

These claims have been rejected as being anticipated by Ishimoto, U.S. Patent No. 4,471,566.

In response thereto, it is respectfully submitted that the present invention, as recited by these claims, was neither anticipated nor rendered obvious by the cited prior art for the following reasons.

In the "Background of the Invention" section of Ishimoto there is a distinction drawn between the use of a conventional "steering plate" and the use of a conventional steering plate in combination with a swingably oriented "controlling element", the latter of which is the object of the improvement described in Ishimoto. See Col. 1, lines 11-18 and 31-45.

More particularly, Ishimoto shows a controlling element 18 which is pivotally connected to a toy chassis 10 via a shaft 20 at one end. The controlling element 18 has magnets 22, 24 attached to the other end thereof. An electromagnet 26 is fixed to the toy chassis 10. The controlling element 18 also has a protrusion 28 extending upwardly which is received in an aperture 30 formed in a "steering plate" 16 "thereby allowing the controlling element 18 to engage swingably in a horizontal plane with the steering plate 16". (Col. 2, lines 53-55). The steering plate 16 ties the left and right wheels 12 together via "rocking shaft bearings" 14.

Energization of the electromagnet 20 is as follows: "if the electro-magnet 26 at its top end is energized to the N polarity, for example, then the controlling element 18 comes to attracting relation to the one magnet 22 and turns to the right around the supporting shaft 20. Similarly, if the electromagnet 26 at its top end is energized to the S polarity, then the controlling element 18 comes to attracting relation to the other magnet 24 and turns to the left around supporting shaft 20." Col. 2, lines 61-68.

Thus, in Ishimoto, there are two separate members, the pivoting controlling element 18 and the laterally movable steering plate 16, the former serving to receive one of the magnets or electromagnet, and the latter serving as a conventional tie rod between wheel turning members. It is the controlling element 18 which moves in a pendulum fashion because of electromagnetism, and then, through the loose connection between the protrusion 28 on the controlling element 18 and the aperture 30 on the tie rod 16, the tie rod 16 causes the wheels 12 to turn. The tie rod 16 does not include either of the magnet(s) 22, 24 or the electromagnet 26. Also, the movement of the magnets 22, 24 is pendular, not co-axial.

Independent claim 1 has been amended to recite the more narrow tie rod of the present invention, instead of a "connecting member", which tie rod includes one of the coil or magnetic body thereon. See, e.g., Figs. 8 and 9 of the present application and numbered paragraphs 35, 36 and 42. Also, the movement of the coil relative to the magnetic body is coaxial, as shown in Figs. 8-10.

By adopting these features, the present inventors minimized the parts necessary for steering, minimized the space necessary to accommodate the structural elements, that is, allowed for greater compactness with the same or better function, eliminated the loose fitting relationship between two or more steering members or links (16, 18, 28 and 30) of Ishimoto by using a single tie rod which both ties the turning members together and receives one of the coil and magnetic body, which leads to a more accurate and faster response steering, provided a more direct electromagnetic response since the movement is coaxial instead of pendular (in the latter regard the strength of the electromagnetism may change with the distance the magnet

moves from the fixed electromagnet), and reduced the overall costs associated with manufacturing and assembly of the tie rod-based steering device of the present invention, when compared to the multi-link Ishimoto steering device. See, e.g., numbered paragraph 44 of the present application.

As for claim 2, which depends from claim 1, the magnetic body is recited as being on the tie rod, which again is not shown by Ishimoto, since neither the coil nor the electromagnet is on the tie rod of Ishimoto.

For claim 3, depending from claim 2, as shown in Fig. 8 of the present application, the two poles of the magnet face an edge portion of the coil and move coaxially. This arrangement is not seen with the pendulum nature of the Ishimoto controlling element 18, magnets 22, 24 and electromagnet 26.

Claim 4 recites that again, it is the tie rod which has the spring, whereas in Ishimoto it is the pivoting controlling element 18 which has the spring 36. Also, the control of movement to neutral is placed directly and centrally at the tie rod, and not on a removed member (controlling element 18) that is first moved, and whose movement must be transmitted to another member, i.e., the tie rod 16 of Ishimoto.

Claim 17, depending from claim 4, recites that the tunable device is at the tie rod, unlike the arrangement of Ishimoto, wherein the spring is only on the controlling element 18.

Independent claim 13 has also been amended to recite that the one of the coil and magnetic body, specifically the magnetic body, is on the tie rod. Also, the claim has been amended to recite that the coil is fixed to a chassis of the toy, and that the magnetic body coaxially moves relative to the coil to attract/repel the coil. Ishimoto, as discussed above, lacks disclosure or suggestion of these features.

E. Rejection of Claims 15 and 21
 Under 35 U.S.C. § 103

These claims are rejected as being made obvious by the above-cited Ishimoto in combination with Lesney ('490). The former is cited for disclosing the features of the steering mechanism recited, and the latter is cited for disclosing a suspension.

For the following reasons, it is respectfully submitted that the present invention, as recited by amended claims 15 and 21, was not rendered obvious by the cited combination.

The above comments regarding Ishimoto relative to the tie rod, coaxial structure, etc., also recited in claim 15, are expressly incorporated herein. Further, prior to concluding that one of ordinary skill would use a suspension with the Ishimoto device, consideration must be made

as to whether and why a suspension would be used. Ishimoto clearly includes no description of nor does it show the use of any suspension. This is believed to be because, where wheel turning members have no vertical play, such as appears to be the case with Ishimoto, there is no need for a suspension. In this regard, Lesney is illustrative. In Fig. 6, there is vertical play in the swivel blocks 5, and a forked spring 18 extends to the front of the toy vehicle where the steering mechanism is to serve as a downward force suspension. However, for Fig. 7, the swivel blocks do not appear to have any play, and a suspension is not used. See Lesney, Page 4, left column, lines 14-16, wherein it is stated: "In this case [Figs. 7 and 8], however, the leading end of the toy is not provided with any resilient suspension.

Even if the spring 18 of Lesney were made to bias somehow against the steering mechanism of Ishimoto, same would have no effect because the swivel blocks 5 do not appear to be movable, in addition to right and left, perpendicular, as recited in claim 15 herein. Thus, to justify the use of the spring, consideration must be made as to how to make the swivel blocks 5 move up and down, and not interfere with the steering mechanism, such as not rendering same slow, or unresponsive to the remote control commands for the type of vehicle to which Ishimoto is directed.

Also, in order to incorporate the spring of Lesney 18 into Ishimoto, it must be asked how and why such a spring from a non-actuated steering mechanism (e.g., no motor/worm gear or electromagnetic function) would be used with a device which uses an actuated steering mechanism. In this regard, Lesney expressly indicates that "steering is effected solely by a child...urging the toy manually to the left or to the right ... while the manual pressure is maintained." (Page 4, left column, lines 14-32. See also column 2, lines 58-64). Neither Ishimoto nor Lesney offers guidance for adding a suspension to such an actuated steering mechanism, nor does the Office Action suggest an acceptable modification. For example, where would the Ishimoto magnet and coils go to accommodate the spring 18 taught by Lesney? By attempting to incorporate such a spring, does the operation or responsiveness of the Ishimoto steering plate 16 and controlling element 18 combination suffer? Again, this question remains unanswered.

More particularly, one would have to be taught how the Lesney spring could be incorporated in Ishimoto and still retain the electromagnetic link steering device thereof. It is not believed either Ishimoto or Lesney provides such a teaching, nor does the Office Action suggest an operable structure. In this regard, Lesney basically teaches a leaf spring 18 oriented lengthwise along the vehicle that is riveted at points 19 and 21. How would such a spring be oriented and fixed in the Ishimoto device? To what would the spring 18 of Lesney attach in the

steering mechanism of Ishimoto? Lesley suggests that the spring connect to the swivel blocks 5 in front of and above the track rod 10 (see Fig. 6). To what would the spring attach to in front of and above the steering plate 16 of Ishimoto.

In light of the above, and contrary to the conclusion included in the Office Action that one would have used "the suspension of Lesney with the running toy of Ishimoto for the purpose of providing better suspension qualities for the toy", it is believed the references themselves teach away from the combination: Ishimoto's wheel turning members would not appear to be the type that would require a suspension. Even if one were to consider using as suspension therewith, it is not clear how same would be used or what additional modifications would be necessary in order to make the wheel turning members move perpendicular to the left and right movements of the wheel turning members. Also, since Lesney is not intended for an actuated steering toy, it is not known how or why one of ordinary skill would modify an actuated steering device based on Lesney.

Accordingly, it is respectfully submitted that the cited art does not include a motivation to make the suggested modifications, or even if there is a need, the means for satisfying this need is not obvious from the cited art, but would require impermissible experimentation to adapt to an actuated steering mechanism toy.

F. Rejection of Claims 16 and 22
 Under 35 U.S.C. § 103

These claims are rejected based on a combination of Ishimoto and Ming ('549). The former is again cited for teaching the recited running toy except the pair of spaced coils, but Ming is cited for teaching same.

For the following reasons, it is respectfully submitted that the present invention, as recited by amended claims 16 and 22, was not rendered obvious for the following reasons.

The above comments regarding Ishimoto are expressly incorporated herein, as claim 16 also recites the tie rod, co-axiality, etc.

Ming, like Ishimoto, relates to a multi-link steering mechanism, wherein the magnet 4 is on the steering lever 3 underneath and pivotably connected to the tie rod 11, and a further centering mechanism 1, 2 is positioned under the steering mechanism. Thus, neither the magnet nor the coils is on the tie rod 11, as with Ishimoto, and there is no suggestion that same should or could be used in Ishimoto. Accordingly, Ming fails to compensate for the incomplete teaching of Ishimoto or Lesney discussed above in relation to the recited tie rod, positioning of the coil and magnet, etc.

Also, independent claim 16, like independent claim 15, recites that the right and left turning units are also capable of moving perpendicularly, with which a suspension is used. It is not believed Ishimoto relates to such a steering device as explained above, and Ming is silent on this point; Ming neither shows nor describes any suspension.

III. CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that claims 1-41 are now in condition for allowance.

If there are any additional fees associated with this Response, please charge same to our Deposit Account No. 19-3935.

Finally, if there are any formal matters remaining after this Response, the undersigned would appreciate a telephone conference with the Examiner to attend to these matters.

Respectfully submitted,

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